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EXAMINER	
PHILPOTT, JUSTIN M	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/738,010	GOSSETT ET AL.	
	Examiner	Art Unit	
	Justin M Philpott	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed June 14, 2004 have been fully considered but they are not persuasive.

1. First, applicant argues (pages 15-16) that Howe does not teach a processor for directing a switching circuit to perform cut through routing as recited in claims 1, 21, 31, 45 and 55. However, as discussed in the previous office action and repeated herein, Howe teaches a processor (e.g., controlling means, see col. 4, lines 19-27 regarding switching packets in a cut-through manner, see also microprocessor 49 in FIG. 16) for directing the switching circuit to perform cut through routing. Thus, applicant's argument is not persuasive.

2. Second, applicant argues (page 16) that Howe "teaches away from unscheduled cut through routing" by the passage of col. 4, line 27-45. However, the claims do not recite "unscheduled cut through routing". Thus, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "unscheduled cut through routing") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, applicant's argument is moot.

3. Third, applicant argues (page 16, second paragraph) that Howe fails to teach pre-emptive cut through routing as recited in claim 21. However, as discussed in the

previous office action, and repeated herein, Howe teaches performing pre-emptive cut through routing (e.g., see col. 4, lines 20-26) over a virtual communications channel (e.g., see col. 4, lines 37-42). Thus, applicant's argument is not persuasive.

4. Fourth, applicant argues (page 16, third paragraph continued to page 17) that Howe fails to teach cut through routing of a communication path probe and a communication path probe update as recited in claim 31. However, as discussed in the previous office action, and repeated herein, Howe teaches cut through routing of a communication path probe (e.g., see col. 25, lines 12-13 regarding request) and a communication path probe update (e.g., see col. 25, lines 13-16 regarding accepting of the request; see also col. 29, lines 30-41 regarding messaging; and col. 35, line 57 – col. 36, line 3 regarding update information), and upstream forwarding of the communication path probe update (e.g., see FIG. 9 wherein paths for control messages are bi-directional, indicating messaging in upstream and downstream direction). Thus, applicant's argument is not persuasive.

5. Fifth, applicant argues (page 17, first paragraph) that Howe does not teach communication path recovery as recited in claim 41. However, as discussed in the previous office action, and repeated herein, Howe teaches a communication path recovery (e.g., see FIG. 43 regarding setup process and corresponding retry in the event of a rejection). Thus, applicant's argument is not persuasive.

6. Sixth, applicant argues (page 17, second paragraph) applicant argues that Howe does not teach utilizing information associated with a previously established communication path to establish a new communication path as recited in claim 45. However, as discussed in the previous office action, and repeated herein, Howe teaches

utilizing information associated with previously established communication paths to establish a new communication path (e.g., see col. 36, lines 4-20 regarding scheduling based upon existing routing schedules). Thus, applicant's argument is not persuasive.

7. Seventh, applicant argues (page 18, first paragraph) that Howe does not teach a processor for directing a switching circuit to perform cut through routing of a communication path probe utilized to establish a communication path for communicating non-time sensitive information as recited in claim 55. However, as discussed in the previous office action, and repeated herein, Howe teaches cut through routing of a communication path probe (e.g., see col. 25, lines 12-13 regarding request) and further teaches a communication path is established for communicating non-time sensitive information (e.g., see col. 4, lines 46-52). Thus, applicant's argument is not persuasive.

8. Eighth, applicant argues (page 18, second paragraph) that Howe does not teach analyzing incoming information and determining if the incoming information has time-sensitive characteristics as recited in claims 2, 22 and 32. However, as discussed in the previous office action, and repeated herein, Howe teaches a processor analyzes incoming information and determines if the incoming information has time sensitive characteristics (e.g., see col. 22, lines 52-60 wherein hardware/software means 32/33/34 inherently determine real-time information from non-real-time information). Thus, applicant's argument is not persuasive.

9. Ninth, applicant argues (page 18, third paragraph) that Howe does not teach a buffer circuit for storing non-time sensitive information temporarily as recited in claims 10, 30 and 40. However, as discussed in the previous office action, and repeated herein, Howe teaches a buffer circuit for storing non time sensitive information (e.g., non real-

time packets) temporarily when directed by the processor where the information is forwarded according to queuing characteristics of the buffer (e.g., see col. 23, lines 16-35 regarding input and output buffers). Thus, applicant's argument is not persuasive.

10. Tenth, applicant argues (page 19, first paragraph) that Howe does not teach cut through communication of time-sensitive information pre-empts communication of other non-time sensitive information as recited in claim 26. However, as discussed in the previous office action, and repeated herein, Howe teaches the time sensitive information (e.g., real-time packets) pre-empts communication of other non-time sensitive information (e.g., non real-time packets) (e.g., see col. 23, lines 21-31 wherein non real-time packets are buffered in order for real-time packets to be transmitted). Thus, applicant's argument is not persuasive.

11. Eleventh, applicant argues (page 19, second paragraph) that Howe does not teach a virtual communication channel is only utilized to communicate time sensitive information as recited in claim 27. However, as discussed in the previous office action, and repeated herein, Howe teaches virtual communication channeling is only utilized to communicate time sensitive information (e.g., see col. 4, lines 37-42). Thus, applicant's argument is not persuasive.

12. Twelfth, applicant argues (page 19, third paragraph) that Howe does not teach the path probe update includes information utilized to establish a communication path from a source path as recited in claim 37. However, as discussed in the previous office action, and repeated herein, Howe teaches the path probe update includes information utilized to establish a communication path from a source to a destination (e.g., see col. 25, lines 1-20

and FIG. 43 wherein the requests establish source to destination communication). Thus, applicant's argument is not persuasive.

13. Thirteenth, applicant argues (page 20, first paragraph) that Howe does not teach a processor analyzes if a communication link to a first network device is unavailable and forwards the information to a second network device if the communication link to a first network device is unavailable as recited in claims 43 and 44. However, as discussed in the previous office action, and repeated herein, Howe teaches analyzing if a communication link to a first network device (e.g., top one of 33 in FIG. 8) is available and forwarding the information to a second network device (e.g., middle one of 33) if the first is unavailable, and if the second device indicates it is not able to establish a communication path to a final destination (e.g., one of 35), forwarding the information to a third network device (e.g., one of 34) (e.g., see col. 26, line 23 – col. 27, line 25). Thus, applicant's argument is not persuasive.

14. Fourteenth, applicant argues (page 20, second paragraph to page 21, first paragraph) that Shimonishi does not teach at least some of the above-mentioned limitations which applicant argues are not taught by Howe. However, as discussed above, Howe teaches each of the above-mentioned limitations. Thus, applicant's argument is not persuasive.

15. Fifteenth, applicant argues (page 21, third paragraph continued on page 22) that Howe in view of Shimonishi does not teach the limitations recited in claims 4, 13, 24, 34 and 54. However, as recited in the previous office action, and repeated herein, Howe teaches determining if the switching circuit is busy performing other switching operations within specified timing constraints (e.g., see FIG. 43 wherein the call request is accepted

or rejected based upon busyness of the switching circuit for a specific time). Further, Shimonishi teaches dropping information which cannot be transmitted by a specific time (e.g., see col. 2, lines 10-11 and lines 59-66). As discussed above, the teachings of Shimonishi provide a network node with maximum utilization of a transmission medium with reduced number of buffer requirements while ensuring minimum bandwidth for each connection (e.g., see col. 1, lines 14-45). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Shimonishi to the system of Howe in order to provide a network node with maximum utilization of a transmission medium with reduced buffer requirements while ensuring minimum bandwidth for each connection. Thus, applicant's argument is not persuasive.

16. Sixteenth, applicant argues (page 22, first paragraph) that Howe in view of Shimonishi does not teach the limitations recited in claims 5, 6, 16, 25, 35 and 36. However, as discussed in the previous office action, and repeated herein, Howe teaches directing a switch to forward time sensitive information upon receipt and analysis of destination information in the header (e.g., see col. 33, line 66 – col. 34, line 67 regarding inserting destination information in the header and forwarding real-time information). Further, regarding claims 35 and 36, Howe teaches adding identification (e.g., implicitly included in synchronization timing messages, see col. 29, lines 30-41) to a communication path probe, forwarding the probe by cut-through routing (e.g., see col. 12, line 40) according to destination information (e.g., according to header, see col. 12, lines 66-67, wherein a header implicitly comprises destination information), and forwarding the communication path probe update (e.g., see col. 25, lines 13-16 regarding accepting of the request; see also col. 29, lines 30-41 regarding messaging; and col. 35, line 57 –

col. 36, line 3 regarding update information) according to source information (implicitly within the header). Thus, applicant's argument is not persuasive.

17. Seventeenth, applicant argues (page 22, second paragraph) that Howe in view of Shimonishi does not teach the limitations recited in claim 7. However, as discussed in the previous office action, and repeated herein, Howe teaches the system functions as an end use device (e.g., end device 35 in FIG. 6). Thus, applicant's argument is not persuasive.

18. Eighteenth, applicant argues (page 22, third paragraph continued to page 23) that Howe in view of Shimonishi does not teach the limitations recited in claims 8, 12, 28 and 38. However, as discussed in the previous office action, and repeated herein, Howe teaches the information and system is compatible with TCP/IP standards (e.g., see col. 15, line 9). Thus, applicant's argument is not persuasive.

19. Nineteenth, applicant argues (page 23, first paragraph) that Howe in view of Shimonishi does not teach the limitations recited in claims 9, 17, 29 and 39. However, as discussed in the previous office action, and repeated herein, while Howe may not specifically disclose that urgent information corresponds to a specific port associated with a timing sensitive device, Howe further teaches information may comprise data associated with urgent information applications (e.g., see col. 13, lines 35-36) which implicitly correspond to a particular timing sensitive device at a port. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to have the urgent information corresponding to a specific port associated with a timing sensitive device, since Howe teaches information may comprise data associated with urgent

information applications (e.g., see col. 13, lines 35-36) which implicitly correspond to a particular timing sensitive device at a port. Thus, applicant's argument is not persuasive.

20. Twentieth, applicant argues (page 23, second paragraph) that Howe in view of Shimonishi does not teach the limitations recited in claims 14, 15 and 49. However, as discussed in the previous office action, and repeated herein, Howe teaches a cut through process is performed to resend information (e.g., see FIG. 43 regarding session retry) as soon as the header is received and analyzed (e.g., see col. 17, lines 21-23). While Howe may not specifically disclose the header comprises timing constraints, Shimonishi teaches a header includes information (e.g., class, VCI, see col. 6, lines 30-52) which determines timing constraints (e.g., delivery time value F, see col. 2, lines 16-66). As discussed above, the teachings of Shimonishi provide a network node with maximum utilization of a transmission medium with reduced number of buffer requirements while ensuring minimum bandwidth for each connection (e.g., see col. 1, lines 14-45). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Shimonishi to the system of Howe in order to provide a network node with maximum utilization of a transmission medium with reduced buffer requirements while ensuring minimum bandwidth for each connection. Thus, applicant's argument is not persuasive.

21. Twenty-first, applicant argues (page 23, third paragraph) that Howe in view of Shimonishi does not teach the limitations recited in claim 18. However, as discussed in the previous office action, and repeated herein, Howe teaches the time sensitive device is a real time device (e.g., see col. 22, lines 1-4). Thus, applicant's argument is not persuasive.

22. Twenty-second, applicant argues (page 24, first paragraph) that Howe in view of Shimonishi does not teach the limitations recited in claim 19. However, as discussed in the previous office action, and repeated herein, Howe teaches a buffer circuit for storing non time sensitive information (e.g., non real-time packets) temporarily when directed by the processor where the information is forwarded according to queuing characteristics of the buffer (e.g., see col. 23, lines 16-35 regarding input and output buffers). Thus, applicant's argument is not persuasive.

23. Twenty-third, applicant argues (page 24, second paragraph) that Howe in view of Shimonishi does not teach the limitations recited in claim 47. However, as discussed in the previous office action, and repeated herein, Howe teaches utilizing information associated with previously established communication paths to establish a new communication path (e.g., see col. 36, lines 4-20 regarding scheduling based upon existing routing schedules) and further teaches communication paths comprise paths to/from an intermediate network device (e.g., see middle node 3 in FIG. 2). Thus, applicant's argument is not persuasive.

24. Twenty-fourth, applicant argues (page 24, third paragraph continued to page 25) that Howe in view of Shimonishi does not teach the limitations recited in claims 50 and 52. However, as discussed in the previous office action, and repeated herein, Howe teaches cut through routing of a communication path probe (e.g., see col. 25, lines 12-13 regarding request) and a communication path probe update (e.g., see col. 25, lines 13-16 regarding accepting of the request; see also col. 29, lines 30-41 regarding messaging; and col. 35, line 57 – col. 36, line 3 regarding update information), and upstream forwarding of the communication path probe update (e.g., see FIG. 9 wherein paths for control

messages are bi-directional, indicating messaging in upstream and downstream direction). Thus, applicant's argument is not persuasive.

25. Twenty-fifth, applicant argues (page 25, first paragraph) that Howe in view of Shimonishi does not teach the limitations recited in claim 51. However, as discussed in the previous office action, and repeated herein, Howe teaches the path probe update includes information utilized to establish a communication path from a source to a destination (e.g., see col. 25, lines 1-20 and FIG. 43 wherein the requests establish source to destination communication). Thus, applicant's argument is not persuasive.

Claim Rejections - 35 USC § 102

26. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

27. Claims 1, 2, 10, 21, 22, 26, 27, 30-32, 37, 40, 41, 43-45 and 55 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,611,519 to Howe.

Regarding claims 1, 21, 31, 41, 45 and 55, Howe teaches a time sensitive quality of service management system comprising: a communication port (e.g., source/originator 1, see col. 4, lines 53-57 and FIG. 1) for communicating information; a switching circuit (e.g., departure switch 2, see col. 4, lines 57-59; see also switching 100 and 150 in FIG. 16) for providing an output communication path (e.g., path 11) to the communication port, the switching circuit coupled to the communication port (e.g., via path 11); a processor (e.g., controlling means, see col. 4, lines 19-27, see also microprocessor 49 in FIG. 16) for directing the switching circuit to perform cut through routing, the processor coupled to the switching circuit; and a memory (e.g., memory 50, see FIG. 16) for storing

information associated with the control (e.g., coupled to controller 120) of the switching circuit (e.g., 100, 150) by the processor (e.g., microprocessor 49), the memory coupled to the processor.

Further, regarding claim 21, Howe teaches performing pre-emptive cut through routing (e.g., see col. 4, lines 20-26) over a virtual communications channel (e.g., see col. 4, lines 37-42).

Further, regarding claim 31, Howe teaches cut through routing of a communication path probe (e.g., see col. 25, lines 12-13 regarding request) and a communication path probe update (e.g., see col. 25, lines 13-16 regarding accepting of the request; see also col. 29, lines 30-41 regarding messaging; and col. 35, line 57 – col. 36, line 3 regarding update information), and upstream forwarding of the communication path probe update (e.g., see FIG. 9 wherein paths for control messages are bi-directional, indicating messaging in upstream and downstream direction).

Further regarding claim 41, Howe teaches a communication path recovery (e.g., see FIG. 43 regarding setup process and corresponding retry in the event of a rejection).

Further, regarding claim 45, Howe teaches utilizing information associated with previously established communication paths to establish a new communication path (e.g., see col. 36, lines 4-20 regarding scheduling based upon existing routing schedules).

Further, regarding claim 55, Howe teaches establishing a communication path for communicating non-time sensitive information (e.g., see col. 4, lines 46-52).

Regarding claims 2, 22 and 32, Howe teaches a processor analyzes incoming information and determines if the incoming information has time sensitive characteristics

(e.g., see col. 22, lines 52-60 wherein hardware/software means 32/33/34 inherently determine real-time information from non-real-time information).

Regarding claims 10, 30 and 40, Howe teaches a buffer circuit for storing non time sensitive information (e.g., non real-time packets) temporarily when directed by the processor where the information is forwarded according to queuing characteristics of the buffer (e.g., see col. 23, lines 16-35 regarding input and output buffers).

Regarding claim 26, Howe teaches the time sensitive information (e.g., real-time packets) pre-empts communication of other non-time sensitive information (e.g., non real-time packets) (e.g., see col. 23, lines 21-31 wherein non real-time packets are buffered in order for real-time packets to be transmitted).

Regarding claim 27, Howe teaches virtual communication channeling is only utilized to communicate time sensitive information (e.g., see col. 4, lines 37-42).

Regarding claim 37, Howe teaches the path probe update includes information utilized to establish a communication path from a source to a destination (e.g., see col. 25, lines 1-20 and FIG. 43 wherein the requests establish source to destination communication).

Regarding claims 43 and 44, Howe teaches analyzing if a communication link to a first network device (e.g., top one of 33 in FIG. 8) is available and forwarding the information to a second network device (e.g., middle one of 33) if the first is unavailable, and if the second device indicates it is not able to establish a communication path to a final destination (e.g., one of 35), forwarding the information to a third network device (e.g., one of 34) (e.g., see col. 26, line 23 – col. 27, line 25).

Claim Rejections - 35 USC § 103

28. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

29. Claims 3-9, 11-20, 23-25, 28, 29, 33-36, 38, 39, 42 and 46-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howe in view of U.S. Patent No. 6,173,331 to Shimonishi.

Regarding claims 3, 11, 20, 23, 33, 42, 46, 48 and 53, Howe teaches the system discussed above regarding claims 2, 22, 32, 41 and 45, however, may not specifically disclose a processor directs the system to drop the incoming information with time sensitive characteristics if the switching circuit cannot output the information within specified timing constraints.

Shimonishi also teaches a quality of service management system and, specifically, teaches analyzing incoming information (e.g., see col. 1, line 61 – col. 2, line 15 regarding detecting VC and class of incoming packets) and determining if the incoming information has time sensitive characteristics (e.g., see col. 6, lines 27-38 regarding the class identifying a particular priority, wherein priority levels implicitly distinguish time sensitive information from non-time sensitive information). Further, Shimonishi teaches a processor directs the system to drop the incoming information (e.g., discarding the received packet, see col. 2, lines 10-11) with time sensitive characteristics if the switching circuit cannot output the information within specified timing constraints according to the time sensitive characteristics (e.g., if the calculated value for the identified priority class is smaller than the decision threshold; see also col. 2, lines 59-66 regarding discarding according to delivery time value F and decision threshold). The

teachings of Shimonishi provide a network node with maximum utilization of a transmission medium with reduced number of buffer requirements while ensuring minimum bandwidth for each connection (e.g., see col. 1, lines 14-45). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Shimonishi to the system of Howe in order to provide a network node with maximum utilization of a transmission medium with reduced buffer requirements while ensuring minimum bandwidth for each connection.

Regarding claims 4, 13, 24, 34 and 54, Howe teaches determining if the switching circuit is busy performing other switching operations within specified timing constraints (e.g., see FIG. 43 wherein the call request is accepted or rejected based upon busyness of the switching circuit for a specific time). Further, Shimonishi teaches dropping information which cannot be transmitted by a specific time (e.g., see col. 2, lines 10-11 and lines 59-66). As discussed above, the teachings of Shimonishi provide a network node with maximum utilization of a transmission medium with reduced number of buffer requirements while ensuring minimum bandwidth for each connection (e.g., see col. 1, lines 14-45). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Shimonishi to the system of Howe in order to provide a network node with maximum utilization of a transmission medium with reduced buffer requirements while ensuring minimum bandwidth for each connection.

Regarding claims 5, 6, 16, 25, 35 and 36, Howe teaches directing a switch to forward time sensitive information upon receipt and analysis of destination information in the header (e.g., see col. 33, line 66 – col. 34, line 67 regarding inserting destination

information in the header and forwarding real-time information). Further, regarding claims 35 and 36, Howe teaches adding identification (e.g., implicitly included in synchronization timing messages, see col. 29, lines 30-41) to a communication path probe, forwarding the probe by cut-through routing (e.g., see col. 12, line 40) according to destination information (e.g., according to header, see col. 12, lines 66-67, wherein a header implicitly comprises destination information), and forwarding the communication path probe update (e.g., see col. 25, lines 13-16 regarding accepting of the request; see also col. 29, lines 30-41 regarding messaging; and col. 35, line 57 – col. 36, line 3 regarding update information) according to source information (implicitly within the header).

Regarding claim 7, Howe teaches the system functions as an end use device (e.g., end device 35 in FIG. 6).

Regarding claims 8, 12, 28 and 38, Howe teaches the information and system is compatible with TCP/IP standards (e.g., see col. 15, line 9). Further, regarding claim 38, Howe teaches Howe teaches a communication path probe update (e.g., see col. 25, lines 13-16 regarding accepting of the request; see also col. 29, lines 30-41 regarding messaging; and col. 35, line 57 – col. 36, line 3 regarding update information) is broadcast to communicatively coupled neighboring intermediate network devices (e.g., see col. 25, lines 1-20 and FIG. 43 wherein the requests establish source to destinations).

Regarding claims 9, 17, 29 and 39, while Howe may not specifically disclose that urgent information corresponds to a specific port associated with a timing sensitive device, Howe further teaches information may comprise data associated with urgent information applications (e.g., see col. 13, lines 35-36) which implicitly correspond to a

particular timing sensitive device at a port. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to have the urgent information corresponding to a specific port associated with a timing sensitive device, since Howe teaches information may comprise data associated with urgent information applications (e.g., see col. 13, lines 35-36) which implicitly correspond to a particular timing sensitive device at a port.

Regarding claims 14, 15 and 49, Howe teaches a cut through process is performed to resend information (e.g., see FIG. 43 regarding session retry) as soon as the header is received and analyzed (e.g., see col. 17, lines 21-23). While Howe may not specifically disclose the header comprises timing constraints, Shimonishi teaches a header includes information (e.g., class, VCI, see col. 6, lines 30-52) which determines timing constraints (e.g., delivery time value F, see col. 2, lines 16-66). As discussed above, the teachings of Shimonishi provide a network node with maximum utilization of a transmission medium with reduced number of buffer requirements while ensuring minimum bandwidth for each connection (e.g., see col. 1, lines 14-45). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Shimonishi to the system of Howe in order to provide a network node with maximum utilization of a transmission medium with reduced buffer requirements while ensuring minimum bandwidth for each connection.

Regarding claim 18, Howe teaches the time sensitive device is a real time device (e.g., see col. 22, lines 1-4).

Regarding claim 19, Howe teaches a buffer circuit for storing non time sensitive information (e.g., non real-time packets) temporarily when directed by the processor.

where the information is forwarded according to queuing characteristics of the buffer (e.g., see col. 23, lines 16-35 regarding input and output buffers).

Regarding claim 47, Howe teaches utilizing information associated with previously established communication paths to establish a new communication path (e.g., see col. 36, lines 4-20 regarding scheduling based upon existing routing schedules) and further teaches communication paths comprise paths to/from an intermediate network device (e.g., see middle node 3 in FIG. 2).

Regarding claims 50 and 52, Howe teaches cut through routing of a communication path probe (e.g., see col. 25, lines 12-13 regarding request) and a communication path probe update (e.g., see col. 25, lines 13-16 regarding accepting of the request; see also col. 29, lines 30-41 regarding messaging; and col. 35, line 57 – col. 36, line 3 regarding update information), and upstream forwarding of the communication path probe update (e.g., see FIG. 9 wherein paths for control messages are bi-directional, indicating messaging in upstream and downstream direction).

Regarding claim 51, Howe teaches the path probe update includes information utilized to establish a communication path from a source to a destination (e.g., see col. 25, lines 1-20 and FIG. 43 wherein the requests establish source to destination communication).

Conclusion

30. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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